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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,265	08/19/2003	Toshiki Hirano	HSJ920030072US1	4667

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EXAMINER

KLIMOWICZ, WILLIAM JOSEPH

ART UNIT	PAPER NUMBER
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2627

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/643,265

Applicant(s)

HIRANO ET AL.

Examiner

William J. Klimowicz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Status

Claims 1-8 are currently pending, of which , claims 1, 4, 5 and 8 are independent.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Plotto (US 4,473,855) in view of Zhang et al. (US 6,396,667 B1).

As per claim 1 and 5, Plotto (US 4,473,855) discloses a disk drive (e.g., see COL. 1, line 16, *et seq.*) and an airflow shroud for a slider, comprising: a frame portion (PROTECT) having an opening suitable for exposing an air bearing surface of a slider (SV) for a disk drive, the frame portion (PROTECT) surrounding the slider (SV); and an attachment portion adapted for attachment to a suspension (SUSP) of a disk drive (e.g., see, *inter alia*, COL. 7, lines 17-21).

Per claim 1 and claim 5, however, Plotto (US 4,473,855) does not expressly disclose a moving-slider-type microactuator coupled to the slider.

Zhang et al. (US 6,396,667 B1) discloses a slider and head suspension of an analogous type disclosed by Plotto (US 4,473,855), but additionally expressly teaches providing a moving-slider-type microactuator (including 66, 64, 176) coupled to a slider (24) for the

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purpose of providing a small microactuator that advantageously allows high resolution head positioning (e.g., see, *inter alia*, COL. 1, line 39 *et. seq.*)

Given the express teachings and motivations, as espoused by Zhang et al. (US 6,396,667 B1), it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the moving-slider-type microactuator as taught by Zhang et al. (US 6,396,667 B1), to the slider of Plotto (US 4,473,855).

The rationale is as follows: one of ordinary skill in the art would have been motivated to provide the moving-slider-type microactuator as taught by Zhang et al. (US 6,396,667 B1), to the slider of Plotto (US 4,473,855) in order to provide a small microactuator that advantageously allows high resolution head positioning (e.g., see, *inter alia*, COL. 1, line 39 *et. seq.*)

Additionally, as per claims 3 and 7, Plotto (US 4,473,855), in combination with Zhang et al. (US 6,396,667 B1), however, remains silent as to the specific relationships set forth in claims 3 and 7, i.e., wherein between about 50 to 100 micrometers of the slider (SV) are exposed through the opening of the frame portion.

Given the teachings of Plotto (US 4,473,855), however, to expressly minimize turbulence effects on the transducer and its associated components, wherein only a slight portion of the air bearing slider is exposed through the opening as seen in FIG. 5b, it would have been obvious to one of ordinary skill in the art at the time of the alleged invention to provide an approximate range of the slider exposure through the opening, including the range of “about 50 to 100 micrometers of the slider” in the course of routine optimization/ experimentation and

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thereby obtain various standard optimized relationships including those set forth in claims 3 and 7.

That is, given the teachings of Plotto (US 4,473,855), however, to expressly minimize turbulence effects on the transducer and its associated components, wherein only a slight portion of the air bearing slider is exposed through the opening as seen in FIG. 5b, it would have been obvious to one of ordinary skill in the art at the time of the alleged invention to provide an approximate range of the slider exposure through the opening, including the range of “about 50 to 100 micrometers of the slider” in the course of routine optimization/ experimentation and thereby obtain various standard optimized relationships including those set forth in claims 3 and 7 in order to protect the majority of the slider from the impinging effects of turbulent air on the slider by providing a minimal exposure of the slider, e.g., “about 3 micrometers,” while also providing sufficient slider shroud protection while allowing enough the of the air bearing surfaces of the slider to provide the desired floating quality, e.g., an upper range of exposure at “about 50 micrometers.” Such a range of slider exposure through the frame opening of “about 50 to 100 micrometers of the slider” is considered to be within the level of ordinary skill in the art, given the teachings and suggestion of Plotto (US 4,473,855).

Additionally, the law is replete with cases in which when the mere difference between the claimed invention and the prior art is some range, variable or other dimensional limitation within the claims, patentability cannot be found.

It furthermore has been held in such a situation, the Applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected

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results relative to the prior art range. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Moreover, the instant disclosure does not set forth evidence ascribing unexpected results due to the claimed dimensions. See *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338 (Fed. Cir. 1984), which held that the dimensional limitations failed to point out a feature which performed and operated any differently from the prior art.

Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Plotto (US 4,473,855) in view of Zhang et al. (US 6,396,667 B1) as applied to claim 1 and claim 5, respectively, above, and further in view of Severson (US 6,549,365 B1).

See the description of Plotto (US 4,473,855) and Zhang et al. (US 6,396,667 B1), *supra*.

As per claims 2 and 6, Plotto (US 4,473,855) does not expressly disclose wherein the frame portion (PROTECT) has side portions forming the opening and a tapered shape between each side portion and the opening.

Severson (US 6,549,365 B1), however, discloses an analogous frame/shroud for diverting air currents directed at the slider, wherein Severson (US 6,549,365 B1) additionally discloses wherein the frame portion has side portions inclusive of a tapered shape between each side portion and the opening. See embodiments of Figures 8-12 of Severson (US 6,549,365 B1).

Given the express teachings and motivations, as espoused by Severson (US 6,549,365 B1), it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the frame portion of Plotto (US 4,473,855) (in combination with Zhang et al. (US 6,396,667 B1)) as having has side portions inclusive of a tapered shape between each side

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portion and the opening, as expressly suggested by the embodiments of FIGS. 8-12 of Severson (US 6,549,365 B1).

The rationale is as follows: one of ordinary skill in the art would have been motivated to provide the frame portion of Plotto (US 4,473,855) (in combination with Zhang et al. (US 6,396,667 B1)) as having side portions inclusive of a tapered shape between each side portion and the opening, as expressly suggested by the embodiments of FIGS. 8-12 of Severson (US 6,549,365 B1) in order to “avoid sharp compression corners and expansion corners in the flow field,” thus minimizing “boundary layer separation and flow instabilities.” See Severson (US 6,549,365 B1) at COL. 6, lines 4-8.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 4 and 8 are rejected under 35 U.S.C. 102(a) as being anticipated by Shimanouchi et al. (WO 02/097803 A1).

As per claims 4 and 8, discloses a disk drive (11) (FIG. 1) and an airflow shroud (e.g., recessed portion in slider into which microactuator (31) is inserted) for a moving-head-type microactuator, comprising: a plate portion (32) attachable to a slider (19) having a moving-head-type microactuator; and a recessed portion (e.g., recessed portion in slider into which

microactuator (31) is inserted) corresponding to the moving-head-type microactuator (31) of the slider (19).

Response to Arguments

Applicants' arguments filed July 6, 2006 have been fully considered but they are not persuasive.

The Applicants allege "that Plotto fails to teach or suggest 'an attachment portion adapted for attachment to a suspension of a disk drive,' (emphasis added) as claimed." See page 5 of Applicants' response.

Contrary to the Applicants' allegations, however, the facts as unambiguously evidenced by Plotto clearly show otherwise.

Plotto discloses a frame portion (PROTECT) having an opening suitable for exposing an air bearing surface of a slider (SV) for a disk drive, the frame portion (PROTECT) surrounding the slider (SV). An attachment portion is adapted for attachment to a suspension (SUSP) of a disk drive (e.g., see, *inter alia*, COL. 7, lines 17-21), which states: "[t]he device PROTECT₁₁ is fastened by appropriate means, for example by rivoting or by welding, to a plate PLAQ₁₁ [i.e., the suspension itself] secured by means which are not shown to the carriage which carries the said platform PL₁₁"

The Applicants allege "that Shimanouchi fails to teach a system with 'a plate portion attachable to a slider having a movable-head-type microactuator,' (emphasis added) as claimed." See page 9 of Applicants' response.

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Contrary to the Applicants allegations, however, the facts as unambiguously evidenced by Shimanouchi clearly show otherwise.

As per claims 4 and 8, Shimanouchi discloses a disk drive (11) (FIG. 1) and an airflow shroud (e.g., recessed portion in slider into which microactuator (31) is inserted) for a moving-head-type microactuator, comprising: a plate portion (32) attachable to a slider (19) having a moving-head-type microactuator; and a recessed portion (e.g., recessed portion in slider into which microactuator (31) is inserted) corresponding to the moving-head-type microactuator (31) of the slider (19).

Pertaining to the claims rejected under 35 U.S.C. § 102 as being anticipated by the disclosure of Shimanouchi the following should be noted. Anticipation is established only when a single prior art reference discloses, expressly or under the principles of inherency, each and every element of a claimed invention as well as disclosing structure which is capable of performing the recited functional limitations. *RCA Corp. v. Applied Digital Data Systems, Inc.*, 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir.); *cert. dismissed*, 468 U.S. 1228 (1984); *W.L. Gore and Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984).

The Examiner, as clearly articulated in the rejection, *supra*, has set forth a one-to-one correspondence with each and every element of the *claimed* invention. More concretely, as recited MPEP§2106:

Office personnel are to give claims their ***broadest reasonable interpretation*** in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). ***Limitations appearing in the specification but not recited in the claim are not read into the claim.*** *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) ("During

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patent examination the pending claims must be interpreted as broadly as their terms reasonably allow. . . . The reason is simply that during patent prosecution when claims can be amended, ambiguities should be recognized, scope and breadth of language explored, and clarification imposed. . . . An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process.”). [Emphasis in bold italics added].

Moreover, one must also bear in mind that limitations contained within Applicant’s arguments cannot be read into the claims for the purpose of avoiding prior art. *In re Sporck*, 386 F.2d 924, 155 USPQ 687 (CCPA 1968).

As set forth in the MPEP§ 706, “the standard to be applied in all cases is the “preponderance of the evidence” test. In other words, an examiner should reject a claim if, in view of the prior art and evidence of record, it is more likely than not that the claim is unpatentable.” Clearly, the Examiner has established that one of ordinary skill in the art would *reasonably* construe the one-to-one correspondence with each and every element of the *claimed* invention, in the manner set forth in the rejection, *supra*, by at least the *preponderance* of the evidence. The Applicant’s arguments have fallen well short of rebutting the Examiner’s *prima facie* case of anticipation.

For the foregoing reasons, the Examiner maintains a *prima facie* case of anticipation in view of the reference evidence. Based on the totality of the record, including due consideration of Applicants’ arguments, the Examiner determines that the preponderance of evidence weighs most heavily in favor of anticipation within the meaning of 35 USC section 102 and/or in favor of obviousness within the meaning of section 103(a), as it applies to the rejections, *supra*.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

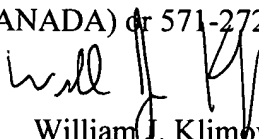
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William J. Klimowicz whose telephone number is (571) 272-7577. The examiner can normally be reached on Monday-Thursday (6:30AM-5:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Thi Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



William J. Klimowicz
Primary Examiner
Art Unit 2627

WJK